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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/006,444	11/20/2001	James A. Aman	4158			
54613	7590 01/11/2006		EXAMINER			
JAMES A. AMAN			SENFI, BE	SENFI, BEHROOZ M		
1500 INDUST SUITE P	TRY ROAD		ART UNIT	PAPER NUMBER		
HATFIELD,	PA 19440		2613			
			DATE MAILED: 01/11/200	6		

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary		Application N	Application No. Applicant(s)						
		10/006,444		AMAN ET AL.					
		Examiner		Art Unit					
		Behrooz Senfi		2613					
Period fo	The MAILING DATE of this communication or Reply	n appears on the cov	er sheet with the co	orrespondence ad	idress				
WHIC - Exte after - If NC - Failu Any	ORTENED STATUTORY PERIOD FOR R CHEVER IS LONGER, FROM THE MAILIN nsions of time may be available under the provisions of 37 Ci SIX (6) MONTHS from the mailing date of this communicatio) period for reply is specified above, the maximum statutory p re to reply within the set or extended period for reply will, by reply received by the Office later than three months after the ed patent term adjustment. See 37 CFR 1.704(b).	IG DATE OF THIS (FR 1.136(a). In no event, ho on. period will apply and will expi statute, cause the application	COMMUNICATION owever, may a reply be time re SIX (6) MONTHS from the n to become ABANDONED	ely filed he mailing date of this c 0 (35 U.S.C. § 133).					
Status				•					
1)[🛛	Responsive to communication(s) filed on	17 October 2005.							
·	This action is FINAL . 2b) This action is non-final.								
3)	Since this application is in condition for allowance except for formal matters, prosecution as to the merits is								
	closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.								
Dispositi	on of Claims								
4)🖂	Claim(s) 34-49 is/are pending in the applic	cation.							
-	4a) Of the above claim(s) is/are withdrawn from consideration.								
5)	Claim(s) is/are allowed.								
6)⊠	Claim(s) <u>34-49</u> is/are rejected.								
7)									
8)[8) Claim(s) are subject to restriction and/or election requirement.								
Applicati	on Papers								
9)	The specification is objected to by the Exa	miner.							
10)☐ The drawing(s) filed on is/are: a)☐ accepted or b)☐ objected to by the Examiner.									
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).									
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).									
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.									
Priority ι	ınder 35 U.S.C. § 119			,					
	12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of:								
	1. Certified copies of the priority documents have been received.								
	2. Certified copies of the priority documents have been received in Application No								
	3. Copies of the certified copies of the priority documents have been received in this National Stage								
	application from the International Bu	,		_					
* S	see the attached detailed Office action for a	a list of the certified o	copies not received	l.					
Attachmen	• •	_	7						
	e of References Cited (PTO-892) e of Draftsperson's Patent Drawing Review (PTO-948								
3) 🔲 Inform	nation Disclosure Statement(s) (PTO-1449 or PTO/SI r No(s)/Mail Date	B/08) 5)	Notice of Informal Par Other:)-152)				

DETAILED ACTION

Response to Amendment

1. Applicant's arguments (filed, 10/17/2005) have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment (filed, 10/17/2005) canceled claims 1 – 33 and added new claims 34 – 49.

Claim Rejections - 35 USC § 103

- 2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 3. Claims 34 35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827).

Regarding claim 34, Paff discloses, an automated system for tracking the movement of multiple objects within a predefined area, (figs. 2 – 3, col. 8, lines 6 - 10) comprising: a first set of cameras forming a fixed area tracking matrix for first detecting the motion of each object in (X, Y) space (figs. 2 – 3, camera MD) and first algorithm operated on a computer system responsive to the fixed area tracking matrix for determining the (X, Y) location of each object, (figs. 5 and 6, controller 10, includes a mathematical processor to perform mathematical calculation with respect to position of the subject) and a second set of cameras forming a movable volume tracking matrix responsive to the determined (X, Y) locations from the first algorithm for controllably

detecting the motion of each object in (X, Y, Z) space (fig. 6, slave cameras, col. 4, lines 50 – 60) and a second algorithm operated on the computer system responsive to the second set of cameras for determining the (X, Y, Z) dimensional characteristics of each object, (fig. 6, each slave camera has the same component configuration as the master camera, each has a controller 10, which includes a mathematical processor to perform mathematical calculation based on the information received from the master camera).

Paff reference is silent in regards to, forming a database representative of each object's locations, movements and dimensional characteristics.

However, Paff reference teaches surveillance system with monitoring station 11, which views the event and is capable of controlling and transmitting/receiving, messages to and from cameras.

Since the Paff teaching is used in a surveillance environment; therefore, it would have been obvious to one skilled in the art that, the monitoring station would have a server or storage, for storing and forming a data base representing the event including all the information with respect to the object, for later review and analysis.

Regarding claim 35, Paff reference teaches, wherein the combined fields of view from all cameras in the first set of cameras form a single contiguous and approximately coplanar field of view that is substantially parallel to the ground surface within the tracking area (fig. 2, coplanar field of view of the MD camera is substantially parallel to the ground).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 5. Claims 36 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paff (US 5,164,827) in view of Leis (US 6,061,644).

Regarding claims 36 and 37, Paff reference teaches, an automated system for Tracking multiple objects using multiple sets of cameras, as discussed with respect to claim 34 above.

It is noted that, Paff reference is silent in regards to, one or more energy sources emitting non-visible energy that is detected by both the first set of area tracking cameras and the second set of volume tracking cameras, and markers adhered onto multiple location on each object that reflect the non-visible energy.

However such features are well known and used in the prior art of the record as evidenced by Leis '644 (i.e. fig. 1, 24L and 24R "infrared energy" and markers, col. 4, lines 22 – 24 and col. 2, lines 61 - 67).

Therefore, taking the combined teaching of Paff and Leis as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to modify the tracking system of Paff by placing markers on each objects that reflects non-visible energy/light as taught by Leis '644 for more sufficient accuracy of tracking multiple objects. Doing so would improve the accuracy of object position and orientation

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determination. And as for the, third algorithm operated on the computer system responsive to the non-visible energy reflected off the markers for forming a database of related coordinates of each marker on each object, see (i.e. fig. 1, element 28, col. 4, lines 17 – 52, col. 6, lines 4 – 20 of Leis).

Regarding claims 38 – 39 and 42 - 43, the limitations claimed, at least one uniquely encoded marker adhered to each object and a forth algorithm operated on the computer system, are substantially similar to claims 36 - 37 and have the same result, therefore the grounds for rejecting claims 36 - 37 also applies here.

Regarding claims 40 - 41, the limitations claimed have been analyzed and rejected with respect to claims 36 - 37.

Regarding claims 44 and 48, the limitations claimed are substantially similar to claim 36, therefore the grounds for rejecting claim 36 also applies here.

Regarding claim 45, combination of Paff and Leis teaches, arranging a set of cameras into a regular configuration such that their combined fields of view form a single contiguous coplanar field of view that is substantially parallel to the ground surface within the tracking area (fig. 2, coplanar field of view of the MD camera is substantially parallel to the ground, of Paff), and using the combined images captured by the first set of cameras to first detect and track at least one marker attached to each object, have been discussed with respect to claim 36.

Regarding claim 46, the limitations claimed are the method, corresponding to the system of claim 36, which have been analyzed and rejected with respect to claim 36.

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Regarding claims 47 and 49, combination of Paff and Leis teaches, reflection of narrow band of non-visible energy (col. 1, lines 49 – 50, lines 64 – 66 and col. 4, lines 15 – 17 of Leis).

Contact

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is (571) 272-7339.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418.**

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Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-6000.

B. M. S.

1/7/2006

PRIMARY EXAMINER